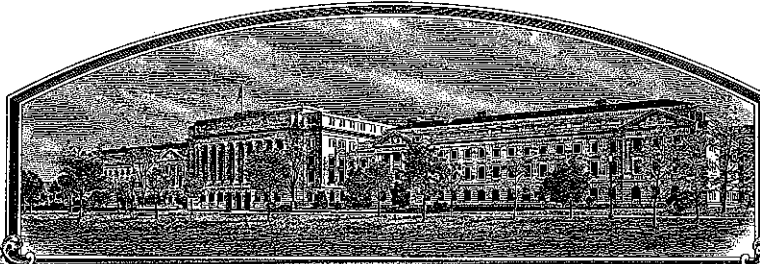


No.

200400027



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Progeny Advanced Genetics, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

LETTUCE

'Liberty'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this seventeenth day of April, in the year two thousand and six.

Attest:

Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

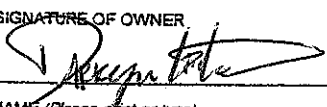
Secretary of Agriculture



U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICEAPPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE  
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER <b>PROGENY ADVANCED GENETICS, INC.</b>		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME <b>PX 839</b>	3. VARIETY NAME <b>LIBERTY</b>
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) <b>1536 B MOFFETT ST SALINAS CA 93905-3342</b>		5. TELEPHONE (Include area code) <b>831-751-6030</b>	FOR OFFICIAL USE ONLY PVPO NUMBER <b>200400027</b>
		6. FAX (Include area code) <b>831-751-6032</b>	
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) <b>CORPORATION</b>	8. IF INCORPORATED, GIVE STATE OF INCORPORATION <b>CALIFORNIA</b>	9. DATE OF INCORPORATION <b>12/26/94</b>	FILING DATE <b>10/31/2003</b>
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers) <b>DARRYN GIBSON MANAGER OF RESEARCH AND DEVELOPMENT PROGENY ADVANCED GENETICS, INC 1536 B MOFFETT ST SALINAS CALIFORNIA 93905</b>			FILING AND EXAMINATION FEES: \$ <b>3652.00</b> DATE <b>10/31/2003</b> CERTIFICATION FEE: \$ DATE
11. TELEPHONE (Include area code) <b>831-751-6030</b>	12. FAX (Include area code) <b>831-751-6032</b>	13. E-MAIL <b>DMAN@I PROGENY.COM</b>	14. CROP KIND (Common Name) <b>LETTUCE</b>
15. GENUS AND SPECIES NAME OF CROP <b>LACTUCA SATIVA</b>		16. FAMILY NAME (Botanical) <b>COMPOSITAE</b>	17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse) a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,705), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)		19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? See Section 83(a) of the Plant Variety Protection Act. <input type="checkbox"/> YES (If "yes", answer items 20 and 21 below) <input checked="" type="checkbox"/> NO (If "no", go to item 22)	
		20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? IF YES, WHICH CLASSES? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED	
		21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? IF YES, SPECIFY THE <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED NUMBER 1,2,3, etc. (If additional explanation is necessary, please use the space indicated on the reverse.)	
22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input checked="" type="checkbox"/> YES <b>DEC 10, 2002</b> <input type="checkbox"/> NO <b>U.S.A</b> IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)		23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)	
24. The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate. The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.			
SIGNATURE OF OWNER 		SIGNATURE OF OWNER	
NAME (Please print or type) <b>DARRYN GIBSON</b>		NAME (Please print or type)	
CAPACITY OR TITLE <b>MANAGER OF RESEARCH AND DEVELOPMENT</b>	DATE <b>10/23/03</b>	CAPACITY OR TITLE	DATE <b>/</b>

**Exhibit A****Details of the Development of the Variety Liberty**

Liberty is an iceberg lettuce variety developed from an individual plant selection from the commercial variety Columbia XL, available from Progeny Advanced Genetics. Columbia XL was being trialed extensively in 1997 throughout the coastal California growing regions, as it was a well-adapted iceberg variety that was in being released commercially.

Based on performance in previous trials, Columbia XL was included in a research and development breeder trial as a check variety, planted in Santa Maria in the spring of 1997. Multiple individual plant selections were made from the breeding lines, and 7 plants were selected from the Columbia XL line. This particular selection, number RSM9732A-240-6, was made on the basis of improved size, color, and texture, tolerance to Downey mildew, bolting tolerance, and tip burn tolerance. The S1 plant was dug from the field, potted and grown to seed in our San Martin, California green house facility. The S1 seed was harvested.

The S1 line was trialed in a research plot in 1998 in the Salinas Valley and identified as being uniform. This plot was identified, selected and advanced as it demonstrated the following traits: improved size, type, color and texture, as well as tolerance to tip burn. The plot was slower bolting than other plots in the trial.

Based on these trial results, a small increase of the remaining seed from the S1 selection was made in our 1999 research and development production block. This line was identified as 99A435. The block was rogued at market maturity, selecting plants demonstrating improved size and color. Selective rogueing was continued until seed maturity, selecting for the slower bolting, larger plants.

The S2 seed was mass harvested in the fall of 1999, and trialed in the Salinas Valley in 2000, demonstrating phenotypic uniformity for the desired traits as described above. The S2 seed was increased in our 2000 research and development production



block where it was again rogued for the described traits. The line was identified in the research production as 00K598. This seed was harvested in bulk in the fall of 2000, with the exception of 10 individual plant selections made from the production plot, producing 10 S3 lines and the S3 bulk variety. The S3 bulk variety was identified as PX 839.

During the 2001 commercial lettuce production season in the Salinas Valley the S3 main line and the ten S3 individual plant selections were trialed on multiple wet dates and planting locations. Plots grown from the individually selected plants identified as 00K598-2, 00K598-3 and 00K598-5 consistently out performed the remaining lines, when evaluated for uniformity, size, type, color, texture, their field holding ability, and tolerance to Downey mildew. All S3 lines, including the bulk variety were increased in the 2001 research production block in the San Joaquin Valley.

The S4 lines derived from the single plant selections were identified in the 2001 San Joaquin Valley research production crop as 01C513, 01C514, and 01C515 respectively. These lines were rogued at multiple stages of production selecting for improved size and late maturity. In late 2001, genetic markers were run on these three lines, identifying the presence of the *cor* gene, verifying the lines resistance to corky root. Multiple trials have been evaluated in 2002 and line 01C514 has best demonstrated the combination of the desired characteristics of size, color, texture, and type, field holding ability and field tolerance to Downy mildew. Line 01C514 consistently out performed its sister lines when evaluated for tip burn resistance. Further pathology work was done at UC Davis, screening for multiple races of Downey mildew. Line 01C514 proved resistant to CAIII, while susceptible to CAI, CAIIA, CAIIB, CAVI, CAVII, CA Novel 0, cg1, am, and N15, N18.

Field screenings were conducted in the Salinas Valley, and the Gilla Valley of Yuma, proving the variety susceptible to both Big Vein and Sclerotinia.



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Based on further review of 2001 trial results and early readings in 2002, line 01C514 was chosen as the stock seed line to produce PX 839 in our 2002 commercial seed production.

As evaluated in seed production blocks and field trials, the PX 839 has been uniform and stable with out variants for 2 generations. The variety was named 'Liberty' in the fall of 2002. Seed from the variety 'Liberty' was first sold on December 10, 2002 to a customer in the Salinas Valley. Seed from this variety had not been sold or offered for sale prior to this date.



**Exhibit B Revision**  
**Statement of Distinctness**

Liberty is a large heading, corky root resistant iceberg lettuce variety adapted to the California coastal production regions, for spring and summer harvest. Liberty is well structured, with excellent leaf texture and head solidity. This variety has a moderately savoyed cap leaf, large core diameter, and smooth ribs. Liberty most closely resembles the commercial lettuce variety Columbia XL.

Liberty is distinct from the variety Columbia XL as it is homozygous recessive for the *cor* gene, providing the variety with resistance to the symptoms associated with corky root. Columbia XL is heterozygous for this gene, negatively affecting its performance in fields where the *rhizomonas superfaciens* is present. The heterozygosity of this gene renders only a fraction of the Columbia XL plants resistant, thus the variety is only tolerant to the bacteria.

Liberty is also distinct from the variety Columbia XL by the following characteristics:

Characteristic	'Liberty'	vs	'Columbia XL'
Butt shape	Rounded		Flat
Butt midrib	Flat		Moderate raised
Basal Shoot	Absent		Present

Liberty is typically 2-4 days later maturing than Columbia XL.

Liberty most typically rated with a color reading of 5gy 5/6 or 5gy 6/6 when measured using the Munsell Colour Chart for Plant Tissues.

U. S. Department of Agriculture  
Agricultural Marketing Service  
Science and Technology Program

OBJECTIVE DESCRIPTION OF VARIETY  
LETTUCE *Lactuca sativa*

Exhibit C

NAME OF APPLICANT (S) <b>PROGENY ADVANCED GENETICS, INC.</b>	FOR OFFICIAL USE ONLY
ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) <b>1536 B MOFFETT STREET SALINAS CALIFORNIA 93905</b>	PVPO NUMBER <b>200400027</b>
	VARIETY NAME
	EXPERIMENTAL DESIGNATION

Place numbers in the boxes for the characters which best describe this variety. Measured data should be the mean of an appropriate number (at least 10) of spaced plants. Royal Horticultural Society or any recognized color standard may be used to determine plant colors.

The location of the test area is:

**SALINAS VALLEY CALIFORNIA**

Color System Used:

**MUNSEL COLOUR CHART FOR PLANT TISSUE**

1. PLANT TYPE: (See list of suggested check varieties page 4.)

**05**

01-Cutting/Leaf  
02-Butterhead  
03-Bibb  
04-Cos or Romaine

05-Great Lakes Group  
06-Vanguard Group  
07-Imperial Group  
08-Eastern (Ithaca) Group

09-Stem  
10-Latin  
11-OTHER

2. SEED:

**2**

COLOR  
1-White (Silver Gray)  
2-Black (Gray Brown)  
3-Brown (Amber)

**2**

LIGHT DORMANCY  
1-Light Required  
2-Light Not Required

**1**

HEAT DORMANCY  
1-Susceptible  
2-Not Susceptible

3. COTYLEDON TO FOURTH LEAF STAGE:

NOTE: Provide a color photograph or photocopy of the fourth leaf from 20 day old seedling grown under optimal conditions.

**2**

SHAPE OF COTYLEDONS:

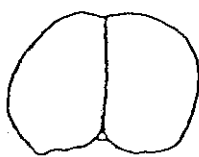
1-Broad

2-Intermediate

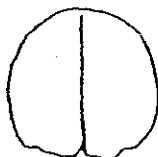
3-Spatulate

**4**

SHAPE OF FOURTH LEAF:



1



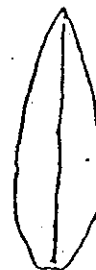
2



3



4



5



6

**26**

LENGTH/WIDTH INDEX OF FOURTH LEAF: LW x 10

**3**

APICAL MARGIN:

1-Entire

4-Moderately Dentate

7-Lobed

**4**

BASAL MARGIN:

2-Crenate/Gnawed  
3-Finely Dentate

5-Coarsely Dentate  
6-Incised

8-OTHER (specify)

**3**

UNDULATION:

1-Flat

2-Slight

3-Medium

4-Marked

**3**

GREEN COLOR:

1-Yellow Green  
2-Light Green

3-Medium Green  
4-Dark Green

5-Blue Green  
6-Silver Green

7-Gray Green

ANTHOCYANIN:

**1**

DISTRIBUTION:

1-Absent  
2-Margin Only

3-Spotted  
4-Throughout

5-OTHER (specify)

**1**

CONCENTRATION:

1-Light

2-Moderate

3-Intense

**1**

ROLLING:

1-Absent

2-Present

**2**

CUPPING:

1-Uncupped

2-Slight

3-Markedly

**6**

**1**

REFLEXING:

1-None

2-Apical Margin

3-Lateral Margins

## 4. MATURE LEAVES (observe harvest-mature outer leaves):

NOTE: Provide color photo of harvest-mature leaves which accurately shows color and margin characteristics.

## MARGIN:

2	INCISION DEPTH: (deepest penetration of the margin)	1-Absent/Shallow (Dark Green Boston)	2-Moderate (Vanguard)	3-Deep (Great Lakes 659)
4	INDENTATION: (finest divisions of the margin)	1-Entire (Dark Green Boston)	3-Deeply Dentate (Great Lakes 659)	5-OTHER (specify)
		2-Shallowly Dentate (Great Lakes 65)	4-Crenate (Vanguard)	
2	UNDULATION OF THE APICAL MARGIN:	1-Absent/Slight (Dark Green Boston)	2-Moderate (Vanguard)	3-Strong (Great Lakes 659)
3	GREEN COLOR:	1-Very Light Green (Bibb)	3-Medium Green (Great Lakes)	5-Very Dark Green
		2-Light Green (Minetto)	4-Dark Green (Vanguard)	6-OTHER
ANTHOCYANIN (grown at or below 10 C):				
1	DISTRIBUTION:	1-Absent	3-Spotted (Calif. Cream Butter)	5-OTHER (specify)
		2-Margin Only (Big Boston)	4-Throughout (Prize Head)	
-	CONCENTRATION:	1-Light (Iceberg)	2-Moderate (Prize Head)	3-Intense (Ruby)
3	SIZE:	1-Small	2-Medium	3-Large
2	GLOSSINESS:	1-Dull (Vanguard)	2-Moderate (Salinas)	3-Glossy (Great Lakes)
2	BLISTERING:	1-Absent/Slight (Salinas)	2-Moderate (Vanguard)	3-Strong (Prize Head)
3	LEAF THICKNESS:	1-Thin	2-Intermediate	3-Thick
1	TRICHOMES:	1-Absent (smooth)	2-Present (spiny)	

## 5. PLANT (at market stage. Choose a comparison variety appropriate for this type.):

42	SPREAD OF FRAME LEAVES: cm This Variety	39	cm Columbia XL	(specify comparison variety)
15	HEAD DIAMETER (market trimmed with single cap leaf): cm This Variety	14	cm Columbia XL	(specify comparison variety)
3	HEAD SHAPE:	1-Flattened	3-Spherical	5-Non-Heading
		2-Slightly Flattened	4-Elongate	6-OTHER
3	HEAD SIZE CLASS:	1-Small	2-Medium	3-Large
24	HEAD COUNT PER CARTON			
739	HEAD WEIGHT: g This Variety	635	g Columbia XL	(specify comparison variety)
3	HEAD FIRMNESS:	1-Loose	3-Firm	
		2-Moderate	4-Very Firm	

## 6. BUTT (bottom of market-trimmed head):

3	SHAPE:	1-Slightly Concave	2-Flat	3-Rounded
1	MIDRIB:	1-Flattened (Salinas)	2-Moderately Raised	3-Prominently Raised (Great Lakes 659)

## 7. CORE (stem of market-trimmed head):

34	mm Diameter at base of head		
44	Ratio of head diameter/core diameter		
37	Core height from base of head to apex: mm This Variety	32	mm Columbia XL
			(specify comparison variety)

## 8. BOLTING (Give First Water Date MAY 12):

NOTE: First Water Date is the date seed first receives adequate moisture to germinate. This can and often does equal the planting date.

68	Number of days from First Water Date to seed stalk emergence (summer conditions): This Variety	72	Columbia XL	(specify comparison variety)
3	BOLTING CLASS:	1-Very Slow	3-Medium	5-Very Rapid
		2-Slow	4-Rapid	
131	Height of mature seed stalk: cm This Variety	122	cm	(specify comparison variety)

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Spread of Bolter Plant (at widest point):

cm This Variety

47

cm COLUMBIA XL

(specify comparison variety)

2

BOLTER LEAVES:

1-Straight

2-Curved

2

MARGIN:

1-Entire

2-Dentate

2

COLOR:

1-Light Green

2-Medium Green

3-Dark Green

BOLTER HABIT:

2

TERMINAL  
INFLORESCENCE:

1-Absent

2-Present

2

LATERAL SHOOTS:  
(above head)

1-Absent

2-Present

1

BASAL SIDE SHOOTS:

1-Absent

2-Present

## 9. MATURITY (earliness of harvest-mature head formation):

NOTE: Complete this section for at least one season.

SEASON	Applic. 1/ # of days	Check 2/ # of days	CHECK VARIETY 2/
Spring	79	77	Columbia XL
Summer	69	66	Columbia XL
Fall			
Winter			

Give planting date(s), and location(s):

Spring MARCH 15 - JUNE 22 - SALINAS VALLEY CALIFORNIA

Summer JUNE 22 - AUGUST 10 SALINAS VALLEY CALIFORNIA

Fall

Winter

1/ First water date to harvest.

2/ Fill in check variety name on the appropriate line.

## 10. ADAPTATION:

PRIMARY REGIONS OF ADAPTION (tested and proven adapted):

(0-Not tested

1-Not Adapted

2-Adapted)

1

Southwest (Calif., Ariz. desert)

2

West Coast

0

Northeast

0

Northcentral

0

Southeast

0

OTHER

SEASON:

2

Spring (area SALINAS VALLEY CA)

1

Fall (area)

2

Summer (area SALINAS VALLEY CA)

1

Winter (area)

0

GREENHOUSE:

0-Not tested

1-Not Adapted

2-Adapted

3

SOIL TYPE:

1-Mineral

2-Organic

3-Both

## 11. DISEASES AND STRESS REACTIONS (0=Not tested; 1=Susceptible; 2=Intermediate; 3=Resistant; 4=Highly resistant; 5=Tolerant):

VIRUS

- ☒ 1 Big Vein  
☒ 3 Lettuce Mosaic  
☐ 0 Cucumber Mosaic  
☐ 0 Broad Bean Wilt  
☐ 0 Turnip Mosaic  
☐ 0 Beet Western Yellows  
☐ 0 Lett. Infectious Yellows  
☐ Other Virus \_\_\_\_\_

FUNGAL/BACTERIAL

- ☒ 3 Corky Root Rot (Pythium Root Rot)  
☐ 1 Downy Mildew (Races \_\_\_\_\_)  
☐ 1 Powdery Mildew  
☐ 1 Sclerotinia Rot  
☐ 0 Bacterial Soft Rot (Pseudomonas spp. & others)  
☐ 0 Botrytis (Gray Mold)  
☐ OTHER \_\_\_\_\_

INSECTS

- ☐ 0 Cabbage Loopers  
☐ 0 Root Aphids  
☐ 0 Green Peach Aphid  
☐ Other Insect \_\_\_\_\_

PHYSIOLOGICAL/STRESS

- ☐ 5 Tipburn  
☐ 5 Heat  
☐ 0 Drought  
☐ 2 Cold  
☐ 0 Salt  
☐ 0 Brown Rib (Rib Discoloration, Rib Blight)  
☐ OTHER \_\_\_\_\_

POST HARVEST

- ☒ 3 Pink Rib  
☐ 0 Russet Spotting  
☐ 0 Rusty Brown Discoloration  
☐ 0 Internal Rib Necrosis (Blackheart, Gray Rib, Gray Streak)  
☐ 0 Brown Stain

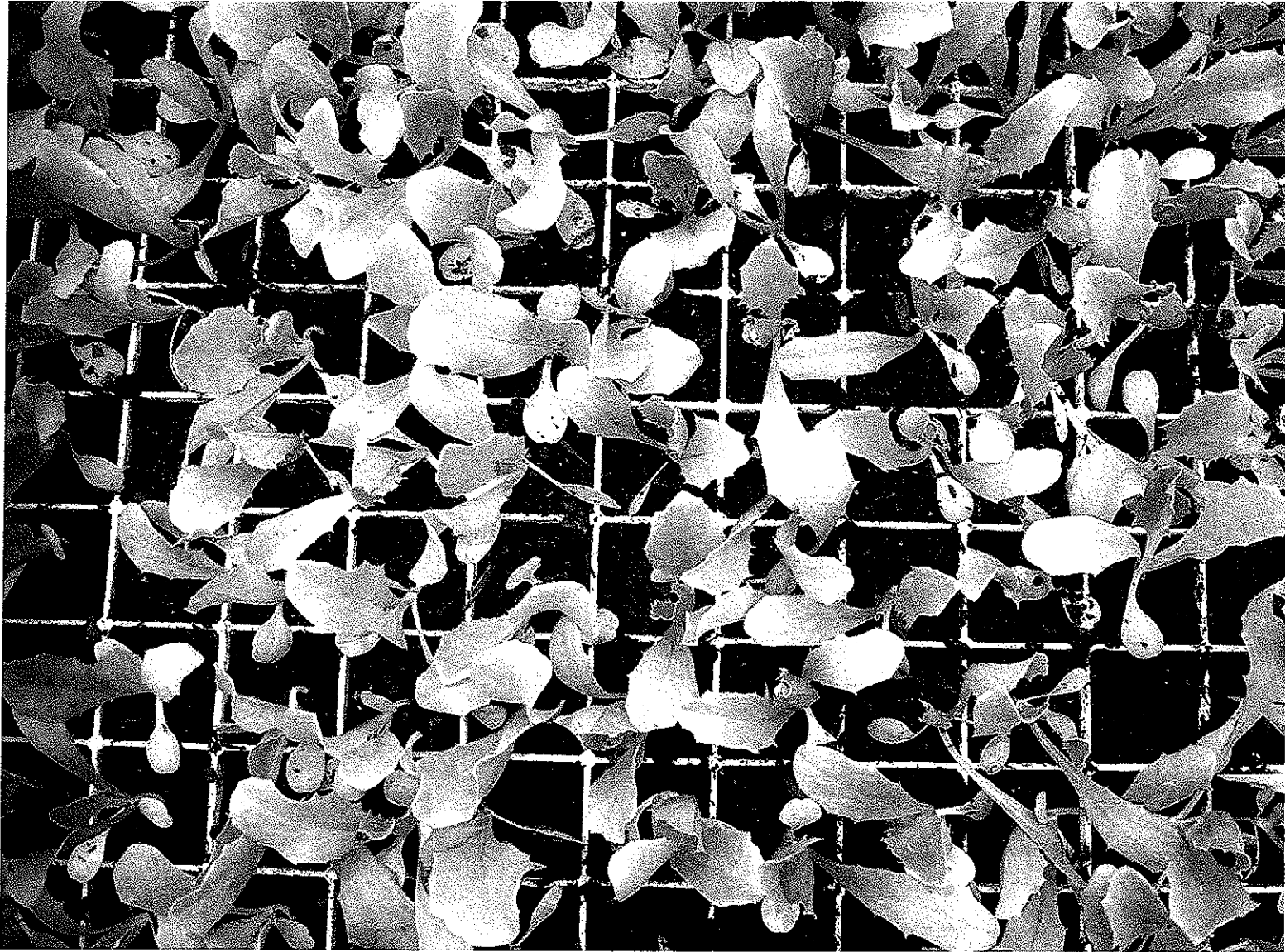
## 12. BIOCHEMICAL OR ELECTROPHORETIC MARKERS:

## 13. COMMENTS:

## SUGGESTED CHECK VARIETIES

- | TYPE |                   |
|------|-------------------|
| 1)   | CUTTING/LEAF      |
| 2)   | BUTTERHEAD        |
| 3)   | BIBB              |
| 4)   | COS, OR ROMAINE   |
| 5)   | GREAT LAKES GROUP |
| 6)   | VANGUARD GROUP    |
| 7)   | IMPERIAL GROUP    |
| 8)   | EASTERN GROUP     |
| 9)   | STEM              |
| 10)  | LATIN             |

- | CHECK VARIETY       |
|---------------------|
| SALAD BOWL          |
| DARK GREEN BOSTON   |
| BIBB                |
| PARRIS ISLAND       |
| GREAT LAKES 659-700 |
| VANGUARD            |
| VIVA                |
| ITHACA              |
| CELITUCE            |
| MATCHLESS           |



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## **Trialing Protocol for Intellectual Property Protection.**

### **I. Set Up**

1. Parental lines and competing varieties are identified.
2. Primary slots are identified.
3. Necessary accession lines are located and purchased/received from seed dealers or growers.
4. All varieties are assigned a number to maintain integrity, and anonymity.
5. Trials are set up in the Progeny warehouse with all necessary varieties. Variety arrangement for trial is diagramed.

### **II. Planting**

1. Commercial plantings are located by contacting commercial growers during the planting slot recommended for the variety.
2. Field is located during commercial planting, and the necessary rows and area is marked off by a Progeny employee with proper training.
3. Varieties are planted according to diagram, in 100 ft. ranges.
4. All varieties are planted in same manner, to mimic the planting of the commercial variety as closely as possible.
5. A trial map is drawn diagramming the trial, the trial location in the field, and directions to the field.

### **III. Maintenance**

1. All varieties are treated identically. The grower handles all watering, fertilization, and pest control, as if it was no different from the commercial field it is grown with.
2. Thinning of the trial is done by a crew contracted by the commercial grower.

### **IV. Evaluation**

1. Evaluations are done as near to the time of the commercial harvest as possible by knowledgeable Progeny employees.
2. The evaluation is conducted "blindly". The evaluator(s) do not have the key to the trial at the time of evaluation.
3. A minimum of 12 heads of each variety are evaluated.



- a. The frame diameter of 12 random plants are measured to the nearest cm.
- b. 12 mature heads of each variety are cut to the cap leaf.
- c. The heads are carried to an adequate work station
- d. The following measurements are then conducted and recorded:
  1. Each head is weighed to the nearest gram.
  2. The core diameter of each head is measured to the nearest mm.
  3. The heads are then sliced in to halves, discarding 1 half.
  4. The core lengths (from the cut stem to the core tip) are measured to the nearest mm.
  5. The head length (from the cut stem to the cap leaf) is measured to the nearest mm.
  6. The head diameter (at its widest point) is measured to the nearest mm.
  7. The ideal maturity or harvest date is then estimated based on the solidity of the head, the core length and any other physiological characteristics present.
  8. The leaf color is documented using the Munsell Color Charts for Plant Tissue.
- e. From these measurements, we then use an Excell program to calculate the averages, the standard deviations and the T-Tests for the compared varieties.

**Trialing protocol for tip burn readings:**

1. An additional 20 mature heads of each variety are cut at the time of market maturity.
2. Each head is completely examined from the external leaves to the youngest internal leaves, looking for any sign of tip burn.
3. A head is noted to have tip burn if the leaf margin shows any sign of discolorization and tissue damage that is associated with the physiological breakdown.
4. Severity of the tip burn is rated from 1-5.
  - a. 1 indicates slight infection and is generally marketable, or what is referred to as 'salt and pepper'.
  - b. 5 indicates a plant that has non-isolated, severely damaged leaf tissue.



200400027

**Exhibit D**  
**Additional Description of the Variety**

Liberty is an iceberg lettuce variety developed for the main season Salinas valley lettuce season. Though not the largest heading variety available for this time slot, Liberty offers the grower a uniform and attractive, excellent textured and well structured variety that is ideal for bulk or box harvest. Liberty having excellent resistance to tip burn and bolting, allows the growers/shippers additional flexibility at time of harvest. Having resistance to corky root, as well a strong field tolerance to Downey mildew provides additional insurance that the variety will meet the specified yield requirements.

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U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE**EXHIBIT E**  
**STATEMENT OF THE BASIS OF OWNERSHIP**

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) PROGENY ADVANCED GENETICS, INC	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER PX 839	3. VARIETY NAME LIBERTY
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) 1536 B MOFFETT ST SALINAS CA 93905	5. TELEPHONE (include area code) 831-751-6030	6. FAX (include area code) 831-751-6032
	7. PVPO NUMBER 200400027	

8. Does the applicant own all rights to the variety? Mark an "X" in appropriate block. If no, please explain. ☒ YES ☐ NO9. Is the applicant (individual or company) a U.S. national or U.S. based company?  
If no, give name of country ☒ YES ☐ NO10. Is the applicant the original owner? ☒ YES ☐ NO If no, please answer one of the following:

a. If original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. national(s)?

☐ YES ☐ NO If no, give name of country

b. If original rights to variety were owned by a company(ies), is(are) the original owner(s) a U.S. based company?

☐ YES ☐ NO If no, give name of country

11. Additional explanation on ownership (if needed, use reverse for extra space):

**PLEASE NOTE:**

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washington, D.C. 20250, or call 1-800-245-6340 (voice) or (202) 720-1127 (TDD). USDA is an equal employment opportunity employer.